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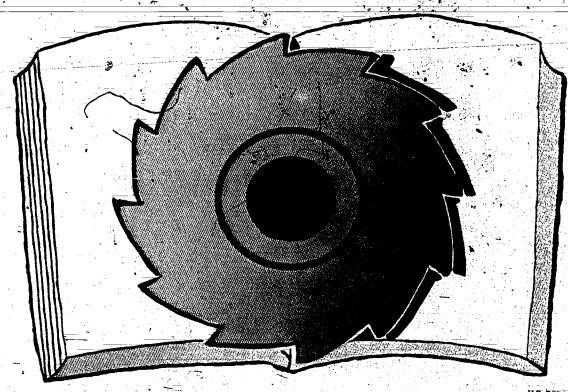
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ABSTRACT

This curriculum guide, one of 15 volumes written for field test use with educationally disadvantaged industrial education students needing additional instruction in the basic skill areas, deals with helping students to develop basic reading and writing skills while studying woodworking. Addressed in the individual units of the guide are the following topics: following safety practices when using woodworking machine tools, using hand cutting tools, selecting a project, mastering cabinetmaking vocabulary; understanding wood shop vocabulary, using the library, filling out shop timecards, and completing a job application form. Each unit contains some or all of the following: a discussion of the major concepts of the technique being covered, instructions to the teacher concerning the use of the given technique, suggested related activities, student instructions, a student assignment, supplemental activities, and one or more worksheets. A basic skills checklist and a basic skills verification form are also provided to assist teachers in identifying those students who require additional help with basic skills. (MN)



"LEARNING TO READ AND WRITE THE WOODWORKING WAY



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DEVELOPED BY

THE EDUCATIONALLY DISADVANTAGED COMMITTEE

INDUSTRIAL EDUCATION INSERVICE PROJECT

in cooperation with

The California State Department of Education

Office of Vocational Education Field Operations Section Industrial Education Unit

and

California State University - Los Angeles Industrial Studies Department

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INTRODUCTION

These instructional techniques were developed for those industrial education students who demonstrate a need for additional instruction in the areas of reading, writing, math, verbal and visual communication. They were written by industrial education teachers with a particular emphasis upon teaching a basic skill while retaining a major focus on the subject areas of auto, woods, metals, electronics, and drafting.

Each of these instructional techniques were written using the same format and with guidance from an expert in the areas of reading, writing, math, verbal and visual communication.

In order to help you identify those students who require additional help with the basic skills, a simple easy-to-use BASIC SKILLS CHECKLIST is provided with each subject area module. This Basic Skills Checklist will enable you as the Industrial Education Teacher to better identify those students in your classes who require additional help in the basic skills.

Additionally, a BASIC SKILLS VERIFICATION FORM is provided which will enable you to ask your school's reading resource teacher, basic skills teacher, math resource teacher, Hart Bill Conferencing teacher, or grade counselors, to verify your identification and provide you with help in the instruction of the basic skills.

You may wish to use these techniques as instruction for your entire class, or as a take-home, parent-involvement assignment. They may also be used in your school's reading or math lab or in conjunction with your school's basic skills instructional programs.

These instructional techniques are successful because your students are able to relate reading, writing, math, verbal and visual communication to their own industrial education classes. When your students succeed, they feel good about themselves, good about their schools, and good about their future.

Page 1

g		FIDENTIAL	-	· · · · · · · · · · · · · · · · · · ·	== '
	CON	FIDENTIAL	Grade _	Cla	ss
	; ;		. Date		
i i	BASIC SKILLS C	CHECKLIST (WOO	DWORKING)		
The following is a communication) that employment or adva	it the student	should demons	trate an abilit	g, math, verb y in for the	al and visual purpose of
			additional ins are checked <u>NO</u> :	truction in v	erbal
1.1 Yes	The student	understands ve	erbal instructi	ons given by	the teacher.
· No			use the guard do so by the to		ilar saw
1.2 Yes	The student mation not u	asks questions nderstood,	about verbal .	instructi o ns o	or infor-
<i>No</i>	Example: Do	es the student	ask questions		
• • •	a machine who understood?		that the verbal	l instructions	; were not
1.3 Yes	The student another stude		ay simple verba	l instruction	s to
No	procedure for	r setting up a	ble to tell and dado head on t erform the oper	he circular s	aw after
1.4 Yes	The student i		bally communica	te with the t	eacher
No <u> </u>	operation on		ants permission the student ab		
2.0 Writing: The items below ar	student needs	additional ins	struction in wr	iting if any	of the
2.1 Yes	The student i	s able to writ	e basic instru	ctions to sel	f and
NO	be performed,		ls to remember a ent write them :		
· 2.2 Ÿes			e the answers t	to questions.	
, No			as demonstrated write the answe		m answer
3.0 Reading: The items below are	student needs a e chècked <u>NO</u> :	additional ins	truction in rea	ding if any c	f the
3.1 Yes	The student is	s able to réad	and understand	job rēlātēd	materíals
ic .	P.	ige 2	, · · · · · · · · · · · · · · · · · · ·		

	Approximately and the second of the second o
No	Example: "Is the student able to read and understand safety
•	rules and warnings (including the shop safety test), job
	applications, job orders, and operating instructions for
• 2	machines?
3.2 Yes	The student is able to follow step by step procedures listed
	on instructional/job sheets
<u>-</u>	
No.	Example: Is the student able to perform tasks in a sequence
	after being given a demonstration and procedure sheet to follow?
	المراجع والمتعالي والمتعالية والمتعالية والمتعالية والمتعالية والمتعالية والمتعالية والمتعالية والمتعالية والم
	dent needs additional instruction in math if any of the items
below are chec	ked NO:
4.1 Yes	The student is able to read a rule to increments of 1/16th in.
No	Example: Is the student able to pass a test which involves
	reading a rule; or is the student, as observed by the teacher,
	able to make accurate measurements during layout work?
2 6 2000	The unitarity are used to provide the amount of matorial monded
4.2 Yes	The student is able to calculate the amount of material needed
4	to manufacture an item.
, No	Example: Is the student able to calculate the amount of wood
WO	needed for the front, back, and two sides of a drawer to be
	constructed
	CONSCIUCTED
4.3 Yes	The student is able to calculate board feet.
No	Example: Given the dimensions of a piece of lumber, is the
	student able to apply the board feet formula to obtain a
-	solution?
, 4.4 Yeş	The student can add and subtract fractions.
7	
No <u>· </u>	Example: Given the sizes of blades and chippers on a dado set,
	is the student able to add or subtract the number of chippers
• • •	needed for a specific width of cut?
5.0 <u>Visual Communi</u>	cation: The student needs additional instruction in visual
communication	if any of the items below are checked NO:
	the same and sketches
5.1 / Yes	The student can understand working drawings and sketches.
77-	Example: Can a student with the necessary woodworking skills
No	construct a simple project from a sketch or drawing provided
	by the teacher?
	by the teacher?
5.2 Yes	The student can communicate to self and others with simple
J.2 163	sketches or drawings.
<i>No</i> ——	Example: Is the student able to draw or sketch an item they
	wish to construct?
Identification made	by: Date
	\mathbf{e}
	Page 3
	Page 3

BASIC SKILLS VERIFICATION FORM

Student _			·	•	Male_	Female	Grade L	evel
Teacher	الوخ		7		Class_	<u> </u>	Date	
The Basic	Skills Che	ck List (a	ttached)	for the	above st	udent indic	ates/a need	for
instructio	nal assist	ance in th	e basic	skills (1	eading,	writing, ma	th, verbal ions are ma	or
	Lacks	Reading S	<u></u>	· · · · · · · · · · · · · · · · · · ·		Facility Manh	1 Communica	ting Chill
		reduring D	,,,,,,,	•		IMCA VEIDE	†	CION DALIE.
• •	Lacks	Writing S	kills			Lacks Visua	1 Communi ca	tion Skill
	Lacks	Mathemati	cal Skil.	- 1 s	è			
•					====	· •		
		METHOD U.	SED FOR Y	VERIFICAT	ION			•
Recent Tes	t Scores:				-		•	
•		Test	•	Score		Date	\\\.\.\.\.	
				<u> </u>		. Duce		J.) P
=			<u> </u>					
							<u> </u>	
4			•					
•				1,	<u></u>	<u></u>		
Other Veri	fication Me	thods:					1	
				4				•
							- - - -	<u> </u>
	<u>.</u>						<u>s </u>	<u>·</u>
•		RE	COMMENDA	TIONS		9		-
The followi	ing instruc	tional ass	istance	is recomm	ended:		••	<u> </u>
		•						
		<u> </u>	 -				•	 \$
Verificatio	n & Recomm	endations	Made By:			Dat	e:	
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				 -	-		<u> </u>	- <u>H</u>
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		<u> </u>	FOLLOW U I					•
Action Take	n.	.	z		/_	•		i
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Results:	· : ===================================	walified i	for advar	iced trai	ning		_	
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	, r	ther	1	<u>.</u>				· · · · · · · · · · · · · · · · · · ·
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	Teacher		<u> </u>				, i	* * * * * * * * * * * * * * * * * * *
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WOODWORKING MACHINE SAFETY (Reading)



WOODWORKING MACHINE SAFETY

TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE:

- a. What SKILL will this technique teach?

 Comprehension of machine safety rules
- of this technique?

Absentee students or students after the second week of school miss general and specific woodworking machine safety rules. To insure that all students see the demonstrations, have them view a video tape presentation on machines demonstrated in class.

2. TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Work with the school's media specialist in planning a script and taping the presentation.
- b. Have the students visit the media center to view the video tape.
- c. Have the students take a written safety test following the tape.
- d. The tape can be edited each year for necessary improvements and for additional coverage.

3. SUGGESTED RELATED ACTIVITIES:

You may wish to tape other demonstrations, i.e. mounting and cutting with a dado head, and have students complete a worksheet immediately following the viewing.



Li

WOODWORKING MACHINE SAFETY

STUDENT MATERIALS:

1. STUDENT INSTRUCTIONS:

- a. Read the safety rules for your shop before going to the media center.
- b. Report to the media specialist in the library to see the video tape "Wood Machine Safety".
- c. Complete the safety test for your shop and return to class.

2. STUDENT ASSIGNMENT:

Your assignment is to view the video tape "Wood Machine Safety" and complete the Woodshop safety test.

3. Extra Things That You Can Do:

You may want to act as demonstrators for taping future lessons.

STUDENT PAGE 1





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HAND CUTTING TOOLS

(Vocabulary)

Woods Read/Write 2



HAND CUTTING TOOLS

TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE:

- a. What SKILL will this technique teach?
 - 1. Spelling
 - 2. Vocabulary
 - 3. Listening
 - 4. Note taking
- b. What student learning problem(s) prompted the development of this technique?

Students need to know the names of hand tools and be able to explain their use.

2. TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Use this technique for introducing and/or reviewing hand cutting tools.
- b. Demonstrate and/or explain the use of each hand tool.
- c. List hand tools on the board.

			TOOL	NAME			TOOL US	E
1.	CROSSCUT SAW	× 1.				1.		#
2.	RIP_SAW	2.				2.		a .
3:	COPING SAW	3.	**			3.		• .
4	BACK SAW	4.				4.	. :	·
5.	JACK PLANE	5.		14		. 5.		
6.	SMOOTH PLANE	6.	-		-weeks and ha	6 .		·
7.	BLOCK PLANE	7.				7.		
8:	RASP	8.		•		8.		
9.	CHISEL	_ 9 .	•	•		_9.		•
10.	GOUGE	10.				10.		
		j .						

- d. Have your students list the hand tools and briefly state the function or use of each tool on the worksheet.
- e. Have your students keep the worksheet as a study aid.

3. SUGGESTED RELATED ACTIVITIES:

Have a follow-up quiz on these hand tools and their uses. The same form can be used: hold up a tool and have the students write the name and its use.



HAND CUTTING TOOLS

STUDENT MATERIALS:

1. STUDENT INSTRUCTIONS:

- a. Spell correctly the name of each cutting tool in the first column.
- b. Write the woodworking use of the tool in the second column.
- c. Keep this worksheet and use it as a study aid.

2. STUDENT ASSIGNMENT:

Your assignment is found on STUDENT PAGE 2.

3. EXTRA THINGS THAT YOU CAN DO:

Use this method for taking notes in other classes.



STUDENT INSTRUCTIONS:

- A i B i SPELL CORRECTLY THE NAME OF EACH CUTTING TOOL IN THE FIRST COLUMN.
- WRITE THE WOODWORKING USE OF THE TOOL IN THE SECOND COLUMN.
- KEEP THIS WORKSHEET AND USE IT AS A STUDY AID.

		· · · · · · · · · · · · · · · · · · ·	·	•		<u>.</u>	\$:	·	
		TOOL	NAME	,					
1.				j			1.	•	
2.	1				ī		2 .	. 1	-
3.	×	_ _	kana 				·3.		- -
4.			Z				4.	:	1.
5.					,		5.		·
6.	de .	•					6.		
7.			: :		; ; -		7.		•
8.			·	· · · · · · · · · · · · · · · · · · ·	C		8.	•	•
9.					• 1 • • • • • • • • • • • • • • • • • •		ġ,		٠
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ERIC C	· · · · · · · · · · · · · · · · · · ·	•			;	16			

SELECTING A PROJECT

(Writing)

Woods Read/Write 3



SELECTING A PROJECT

TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE:

a. What SKILL will this technique teach?

Writing a paragraph.

b. What student learning problem(s) prompted the development of this technique?

Many students have difficulty explaining an idea in written form.

2. TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Before a student begins an elective project, require him/her to write a short paragraph explaining why he/she wants to build this project.
- b. Provide a sample paragraph answering these questions:
 Who is the project for? What purpose will it serve?
 How long will it take you to complete the project?
 What is the estimated cost?
- c. Correct the paper and return it to the student.

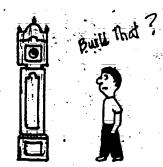
3. Suggested Related ACTIVITIES

Try to provide special help for those students who need help with writing.



8

SELECTING A PROJECT



STUDENT MATERIALS:

1. STUDENT INSTRUCTIONS:

- a. This short assignment will give you practice in expressing an idea in writing.
- b. Write one or two paragraphs answering the following questions: Why do you want to build this project? Who is the project for? What purpose will the project serve? How long do you plan on working on it? How much will it cost?
- c. Write as clearly as you can. Use the shop dictionary if you need to:

2. STUDENT ASSIGNMENT:

Choose a project and write a paragraph explaining it. Here is an example to help you:

Example: ____ NIGHT_STAND _____ (project)

The project I have chosen to make this semester is a Night Stand. My younger brother needs a night stand in his bedroom. He needs more storage for his baseball gloves, books, wallet and other things that often get mixed up with my things. I expect to work on this assignment for six weeks and the cost of the project including hardware will be around thirty dollars.

3. Extra Things That You Can Do:

You might need to write a short statement for another class assignment or for a job interview.

STUDENT PAGE 1



(Vocabulary)

Woods Read/Write 4





TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE

- a. What SKILL will this technique teach?

 Vocabulary and spelling
- b. What student learning problem(s) prompted the development of this technique?

Advanced students misspell and misname cabinet parts.

2. TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Following a lesson on cabinetmaking, explain the importance of being able to communicate properly to other cabinetmakers.
- b. Introduce and explain how a crossword puzzle works.
- c. Assign the puzzle worksheet to be completed in class.
- d. Quickly check to make sure that all students have com-
- e. After 10 minutes (or less), have your students trade papers and correct them as a class.
- f. Return the puzzle worksheet to your students for use as a study guide.

3. Suggested Related Activities:

Have a fill-in type spelling and identification quiz using the same terms the following week.



STUDENT MATERIALS:

1. STUDENT INSTRUCTIONS:

- a. This is a crossword puzzle similar to crossword puzzles you may have worked in the newspaper.
- b. Match a word to the description given in each statement.
- c. Use only the cabinetmaking words listed on STUDENT PAGE 2.

2. STUDENT ASSIGNMENT:

Your assignment is found on STUDENT PAGE 2,

3. Extra Things That You Can Do:

The next time you see a crossword puzzle in the newspaper you may want to try it. It will be a challenge and you'll learn some new words.

STUDENT PAGE 1



CABINETMAKING WORDS

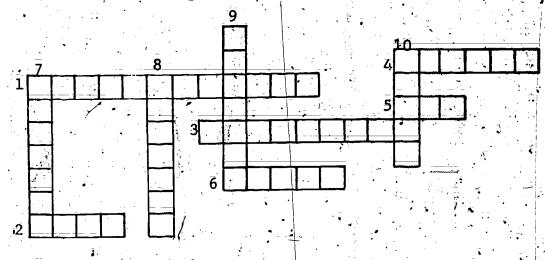
drawer faceframe web . carcass contemporary rail ~ counter dowel molding stile

- A style of cabinetry
 A horizontal part
 The front parts around doors and drawers
 A specialized box
 An inside frame

- A vertical part

DOWN

- 7. The top of a cabinet 8. The trim around top and base of 9. The shell of a cabinet
- Used in gluing frames.



STUDENT PAGE 2

(Vocabulary And Reading)

Woods Read/Write 5



TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE:

- a. What SKILL will this technique teach?

 Technical vocabulary and reading skills.
- b. What student learning problem(s) prompted the development of this technique?
 - Many students have problems reading textbooks and understanding technical subject area words.

2 TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Give your students the attached lesson on wood shop words.
- b. Briefly explain to your students how to:
 - 1. Alphabetize
 - 2. Complete fill-in questions
 - 3. Define multiple meaning words

3. EXTRA THINGS THAT YOU CAN DO:

Give your students more wood shop words and have them write sentences using these words.



STUDENT MATERIALS:

1. STUDENT INSTRUCTIONS:

Complete the lesson on STUDENT PAGE 2.

2. STUDENT ASSIGNMENT:

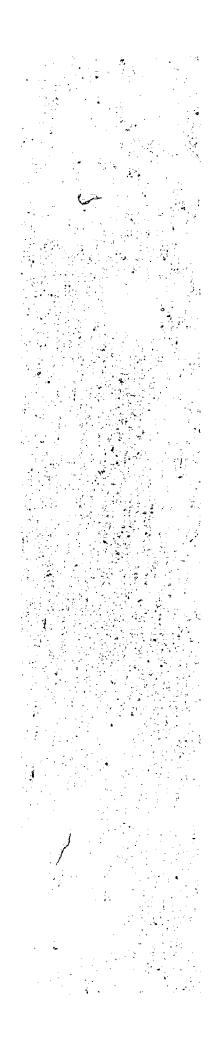
Your assignment is found on STUDENT PAGE 2.

3. Extra Things That You Can Do:

Try to think of more words that are used both in wood shop and outside of the shop but have different meanings, i.e., drill, guard, etc.

STUDENT PAGE 1











Put	these words	in alphab	etical or	der:		
I	Dimensionin	g 1.	Ca	binetma	ker `	
, (Coping Saw	2.				•
Ī	Dado Head	3.	;			=
. (Cabinetmake	r 4.				_
Ī	Dowels	5.	·	<u>.</u>		= ->
Ī	Drawings	6 .				-
Ō	Corner Bloc	ks 7.		· · · · · · · · · · · · · · · · · · ·		_
				.		•
Selec	t the corr	ect word o	r words t	o comple	ete these	sentence
-	•		· ·			
moldi	ng cro	ss cut	drill pr	ess	grain	lathe
				edi i		
1. Y	Cou can	us	ing a cir	cular sa	w or ban	d saw.
2. K	hen sandin	g vou usua	lly sand	with the		
	f you want ou would u			owl or c	andlesti	ck holder
4. B	Sefore using to bore a h	g a jig sav ole in the	w you may wood.	need to	use a _	
5. A	common wa lue, nail	y to attacl or staple.	n <u></u>	to a	case pi	ece is to
* · · : *						: T
Use t shop.	hese words If you w	in sentend ish you may	ces that a	are not ictionar	related y.	to wood
Clear	ance 1.					
Guide			, , , , , , , , , , , , , , , , , , ,			=
Brace						
Fence						· · · · · · · · · · · · · · · · · · ·
				,	· · · · · · · · · · · · · · · · · · ·	



LIBRARY

(Reading)

Woods Read/Write 6



"LIBRARY"

TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE:

- a. What SKILL will this technique teach?
 - 1. Reading
 - 2. Research
 - 3. Browsing written material
- b. What student learning problem (s) prompted the development of this technique?

Students usually read only what is assigned. With the "Library" readily accessible they are more apt to pick up something based on interest.

2. TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Establish a specific place in the shop lab for display of magazines pamphlets, etc.
- b. Place a student in charge to keep track of things and to place magazines into an attractive display.
- c. The display may include periodicals, catalogues, career pamphlets, reference books, dictionary, and "How to..." folders.
- d. Encourage students to read selections from this "Library' during times when they have completed other assignments or projects.

3. SUGGESTED RELATED ACTIVITIES:



(Writing) SHOP TIMECARDS

Woods Read/Write 7



SHOP TIMECARDS

TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE:

a. What SKILL will this technique teach?

Verbal or written communication can be taught using this technique.

b. What student learning problem(s) prompted the development of this technique?

Students need to be able to write short accurate descriptions of what they do each day. In industry, all workers must learn to keep some kind of records. Shop timecards help teach day by day record keeping.

2. TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Have timecards printed to provide a space for each day of the grading period. Three weeks are placed on the side of the card. A column should be for each date, description of work done, or operation performed, date started and date finished.
- b. Collect cards after three weeks for grading.
- c. Timecards are graded for completeness, description of work done, neatness and anything else the teacher desires. Grading should become more demanding as the year progresses.
- d. Return cards for next three weeks.
- e. Timecard grades are averaged in with other grades in each grading period.

3. SUGGESTED RELATED ACTIVITIES:

Have your students keep a record of all materials they use during a six week period.



SHOP TIMECARDS

STUDENT MATERIALS:

1. STUDENT INSTRUCTIONS:

- a. Fill in your name and period at the top of the timecard.
 Place each days date in the date column. There is room
 for three weeks on each side of card.
- b. Each day briefly explain the work you did or the operations that you performed in the description column.
- c. Turn in for grading each three weeks.
- d. If you lose your timecard, make your own on a piece of paper. You will not receive full credit but you will get a grade.

2. STUDENT ASSIGNMENT:

A sample timecard is found on STUDENT PAGE 2

3. Extra Things That You Can Do:

Keep a record of all the materials you use in a six week period.



SAMPLE TIMECARD

Last . Name	First Name	·- ·	Per
·	METAL SHOP TIME CARD		,
Date	Job Description	Start Date	Date Finished
· <u> </u>			
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JOB APPLICATION

(Reading/Writing)

Woods Read/Write 8



JOB APPLICATION

TEACHER MATERIALS:

1. CONCEPTS OF TECHNIQUE:

- a. What SKILL will this technique teach?
 - 1. Completing a job application form
 - 2. Spelling
 - 3. Reading for details
- b. What student learning problem(s) prompted the development of this technique?

Students often apply for part-time jobs while attending school and are asked to fill out a job application. Students need practice answering questions that relate to their industrial shop experiences.

2. TEACHER INSTRUCTIONS FOR THE USE OF THIS TECHNIQUE:

- a. Use this technique as you organize your shops' clean-up system:
- b. Tell students that they will apply for clean-up jobs by completing a job application form.
- c. Pass out forms and explain the importance of writing clearly and following directions exactly as they are stated.
- d. List job positions on the board such as: foreman, floor sweeper, tool room person, etc.
- e. Explain the importance of spelling all words correctly.

3. SUGGESTED RELATED ACTIVITIES:

- a. Obtain forms from large companies and/or from small shops for students to see.
- b. Students can ask their parents to bring home job application samples from where they work.
- c. Have students complete a longer application form for a



JOB APPLICATION

STUDENT MATERIALS:

1. STUDENT INSTRUCTIONS:

- a. Complete all questions and statements—as carefully as you can.
- b. Be sure to write neatly, spell correctly, and be as complete as possible.
- c. Select from the board the job position you are applying for.

2. STUDENT ASSIGNMENT:

Your assignment is found on STUDENT PAGE 2

3. Extra Things That You Can Do:

Visit a career center and pick up a handout which explains how to get a job.



JOB APPLICATION	Ş	
Name:		
Address: Phone:		
What job position are you applying for?		
What wood machines have you used?		***
What was the last school year you completed? _		
Who is your present employer?	•	
What is your job title?		
Who was your last employer?		
What was your job title?	· , , ,	
List other job experiences:		-,(
List references (other than family):	: : :	
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THE FOLLOWING INDUSTRIAL EDUCATION BASIC SKILL INSTRUCTIONAL TECHNIQUES ARE AVAILABLE FROM:

VOICE (VOCATIONAL OCCUPATIONAL INFORMATION CENTER FOR EDUCATORS)

721 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

"LEARNING TO READ AND WRITE THE AUTOMOTIVE WAY"

"LEARNING TO DO MATH THE AUTOMOTIVE WAY"

"LEARNING TO VERBALLY & VISUALLY COMMUNICATE THE AUTOMOTIVE WAY"

"LEARNING TO READ AND WRITE THE WOODWORKING WAY"

"LEARNING TO DO MATH THE WOODWORKING WAY"

"LEARNING TO VERBALLY & VISUALLY COMMUNICATE THE WOODWORKING WAY"

"LEARNING TO READ AND WRITE THE METALWORKING WAY"

"LEARNING TO DO MATH THE METALWORKING WAY"

"LEARNING TO VERBALLY & VISUALLY COMMUNICATE THE METALWORKING WAY"

"LEARNING TO READ AND WRITE THE ELECTRONICS WAY"

"LEARNING TO DO MATH THE ELECTRONICS WAY"

"LEARNING TO VERBALLY & VISUALLY COMMUNICATE THE ELECTRONICS WAY"

"LEARNING TO READ AND WRITE THE DRAFTING WAY"

"LEARNING TO DO MATH THE DRAFTING WAY"

"LEARNING TO VERBALLY & VISUALLY COMMUNICATE THE DRAFTING WAY"







